Riverside Fixed Guideway Transit Study

Task 5 - Working Paper

Land Use Constraints Analysis

July 18, 1994

Submitted to:

City of Riverside,
in cooperation with
The Western Riverside Council of Governments

Submitted by:

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in association with:

Korve Engineering, Inc.

LAND USE AND CONSTRAINTS ANALYSIS FOR THE RIVERSIDE FIXED GUIDEWAY TRANSIT STUDY

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PURPOSE AND OBJECTIVES OF THIS STUDY

The City of Riverside, in cooperation with the Western Riverside Council of Governments and the Riverside Transit Authority, is exploring the feasibility of a major public transit project in the City of Riverside. The agencies involved in this study identified Magnolia Avenue and University Avenue as the corridor for primary consideration. The preliminary stage of analysis considered six candidate alternatives:

- ***Alternative 1 - Base/TSM*** is the no project alternative which assumes existing transit modes will continue.
- ***Alternative 2 - Bus/HOV Lane*** provides for bus and high occupancy vehicle lanes along the corridor in both mixed flow and exclusive right-of-way.
- ***Alternative 3 - At Grade LRT*** assumes that at grade exclusive right of way would be provided to accommodate light rail transit.
- ***Alternative 4 - Elevated LRT*** assumes the LRT would be elevated over the length of the corridor.
- ***Alternative 5 - People Mover*** alternative assumes that a fully automated people mover would be constructed and operated over the length of the corridor.
- ***Alternative 6 - Monorail*** alternative provides for the construction and operation of a monorail system over the length of the corridor.

The alternatives analysis narrowed the alternatives for final selection down to *Alternative 2 - Bus/HOV Lane*, a combination *Alternative 3/4 - At Grade/Elevated LRT*, and *Alternative 5/6 - Elevated Monorail/People Mover* (either of these alternatives could be utilized.

The objectives of the land use study include the following:

- To identify land uses and development adjacent to the study alignments in order to characterize potential displacement impacts.
- To complete a generalized identification of development within the vicinity of the transit corridor.

- To identify sensitive land uses that might benefit or be adversely affected by construction and operational impacts associated with future transit infrastructure.

The objectives of this task also focused on identifying *future* development along the study corridors. The objectives of this effort included the following:

- To identify future development along the study corridor that may benefit from the future transit alternatives.
- To identify future development immediately adjacent to the study alignments that may be adversely affected by the proposed transit alternatives.
- To identify opportunity areas within the project corridor for both interim and long-term transit related development.

STUDY METHODOLOGY

The 10-mile transit corridor extends from the University of California, Riverside campus in the northeast portion of the City of Riverside and continues westerly through downtown to the southwestern portion of the City. (See Exhibit 1.) For purposes of analysis, the study alignment has been divided into the following seven segments:

- ***Segment A*** follows University Avenue extending from the University of California Campus to Downtown Riverside.
- ***Segment B*** extends from the 14th Street in downtown to Jurupa Avenue.
- ***Segment C*** includes Magnolia Avenue between Jurupa Avenue to Washington Street.
- ***Segment D*** includes Magnolia Avenue between Washington Street to Jackson Street.
- ***Segment E*** follows Magnolia Avenue between Jackson Street to Banbury Drive.
- ***Segment F*** includes Magnolia Avenue between Banbury Drive to the City boundaries.

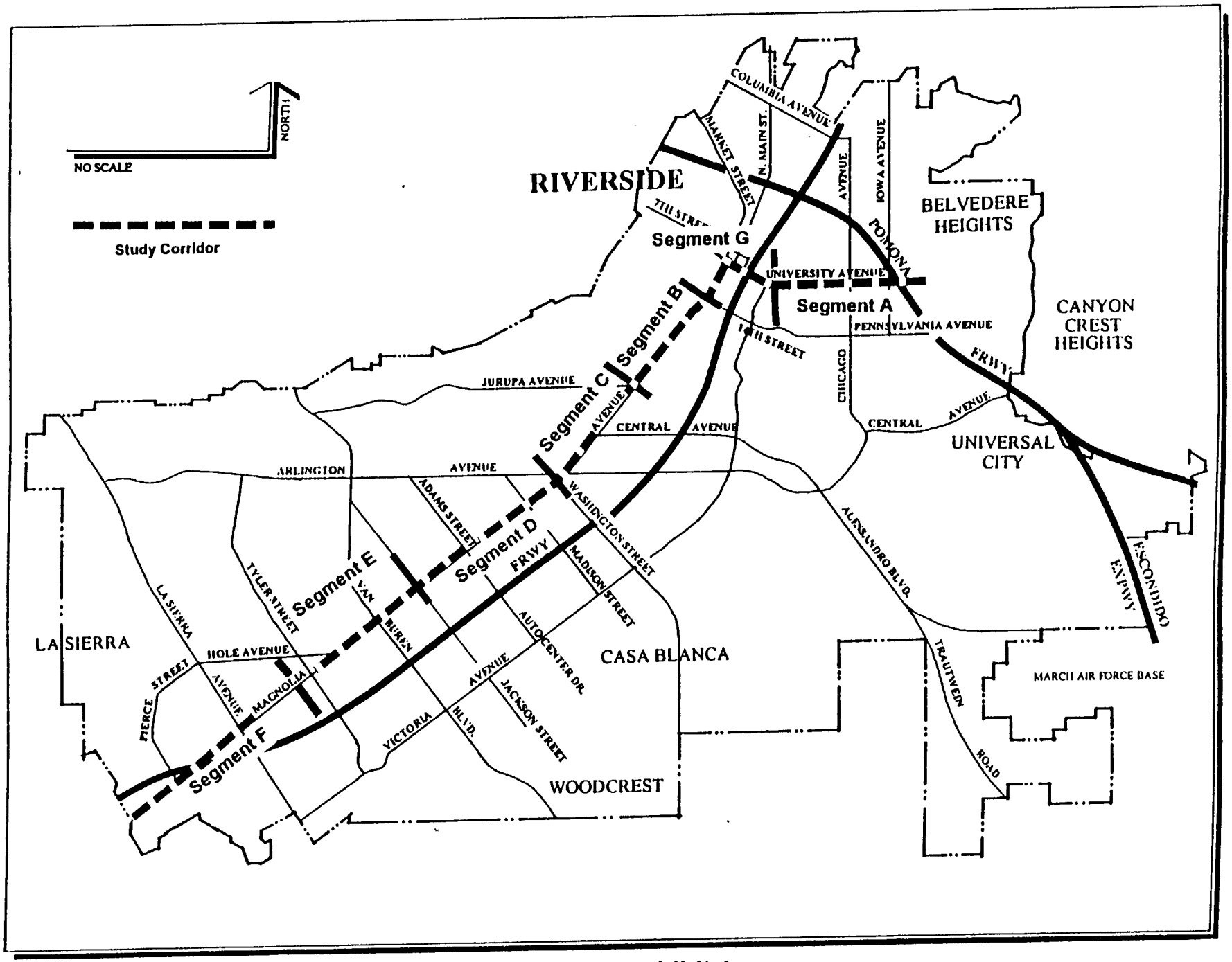

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Exhibit 1

Transit Corridor and Study Segments

- ***Segment G*** is located in downtown Riverside and follows University Avenue east of Lemon; 10th Street, west of Main; and Market Street, south of 12th Street.

A survey of development and land uses immediately adjacent to the alignment was completed. Planners then classified land uses that were identified in land use surveys. The existing land use classification system contains the following categories:

- ***Single-family Residential.*** This land use category is characterized by single-family detached homes. Predominantly single-family residential neighborhoods were placed in this category.

- ***Multiple-Family Residential.*** This category corresponds to residential development consisting of higher density development including apartments and condominiums.

- ***Highway Commercial.*** Strip commercial development typically found along major arterial roadways are placed in this category. Businesses found in this category include smaller neighborhood retail, automotive services, specialty retail, services, and other commercial establishments that depend on traffic.

- ***Community Commercial.*** Shopping centers are included in this category. Community commercial centers generally contain supermarkets, miscellaneous specialty shops, retailing uses, and professional office uses that serve the local community.

- ***Downtown and Regional Commercial.*** Regional commercial shopping centers included in this category generally serve a regional market.

- ***Industrial/Warehousing.*** Major employment activities or areas where there are concentrations of smaller manufacturing uses are included in this category.

- ***Public/Institutional.*** Land uses in this category include schools, hospitals, churches, and other public and quasi-public uses.

- ***Open Space.*** Land uses in this category include areas used for the preservation of natural open space and outdoor recreation.

During the land use field survey, the project team also noted significant trees and vegetation planted within the parkways lining the corridor and within median strips and any overhead utilities within the corridor.

Future development along the study corridor is governed by the City of Riverside Land Use Element and the supporting Zoning Ordinance. The City's General Plan Land Use Diagram indicates the type of future development that is to occur within specific locations throughout the City. Each General Plan category contains standards for development density and intensity. Residential standards are defined by units per acre and standards for commercial development are defined by floor area ratio (FAR). Floor area ratio is the ratio of the building floor area to the parcel's floor area. Following a review of the General Plan, the planned land uses were mapped for each of the seven segments (Segments A through G). Table 1 indicates the General Plan land use categories that were identified along the proposed route.

TABLE 1
GENERAL PLAN LAND USE CATEGORIES

Category & Policy Intent	Typical (1) Density/Intensity	Maximum (2) Density/Intensity
Medium Density Residential (RMD) - Single family houses on standard large lots	4 Units/Acre	6.50 Units/Acre
Medium High Density (RMH) - Predominantly low density apartments, duplexes, or cluster developments	12 Units/Acre	25 Units/Acre
High Density Residential (RHD) - Apartments	20 Units/Acre	25 Units/Acre
Retail Business and Office (CBO) -Moderate intensity office, indoor commercial uses and visitor commercial	.25 FAR	.35 FAR
Service Commercial (CSV) - General office and retail uses developed to only moderate aesthetic standards	.15 FAR	.30 FAR
Industrial Business Park (IBP) - High quality businesses and industry, strict design standards	.30 FAR	.40 FAR
Low Rise Office (OLR) - One to three story professional offices (114 emp/acre)	.50 FAR	.50 FAR
Mid-Rise Office (OMR) - Four to six story professional office (250 emp/acre)	1.15 FAR	1.50 FAR
Public Parks (NPK) - Publicly owned and managed open space and recreation facilities.	NA	NA

TABLE 1
GENERAL PLAN LAND USE CATEGORIES

Category & Policy Intent	Typical (1) Density/Intensity	Maximum (2) Density/Intensity
Public Facilities and Institutions (PFI) - Includes educational facilities, fire stations, libraries, and hospitals	NA	NA

Notes: (1) Typical - Those densities which are likely to be achieved through normal development.
(2) Maximum densities may be exceeded pursuant to State housing law.

Source: Riverside Land Use Diagram, Planning Commission Recommendations

Traffic along the corridor can generate high levels of noise which is likely to exceed 65 dBA during much of the day. In addition, local air quality immediately adjacent to the transit corridor and at the busier intersections are likely to be unhealthful to children, seniors, and persons with respiratory problems. The project team identified land uses along the study corridor that are considered *sensitive receptors*. These sensitive receptors include schools, hospitals, and residential areas.

The project team also identified *related projects* within the project area. The project team reviewed the City of Riverside General Plan and a number of Specific Plans and Master Plans that have been prepared. In addition, the project team identified major projects that are proposed, planned, approved, or under construction.

SECTION 2: LAND USE CHARACTERISTICS AND ENVIRONMENTAL CONSTRAINTS

This section of the report provides a summary of the land use characteristics and constraints identified during the land use surveys and review of the City's General Plan and related development plans. The format of this section follows the proposed route segments, A through G, identified in the earlier reports provided by Korve Engineering. Each segment is discussed in regards to existing development, planned land uses, and sensitive land uses. Exhibit 2 illustrates the major existing development in the vicinity of the corridor. Potential impacts and constraints to the development on surrounding land uses are characterized in the tables following the discussion of each segment. The tables indicate potential impacts on land use, population/housing, public health, air quality, traffic, landscaping, energy consumption, noise, public services, utilities, aesthetics, and cultural resources.

SEGMENT A - UNIVERSITY AVENUE: UCR TO DOWNTOWN

Existing Development.

The University of California Riverside Campus is located at the eastern end of this segment. Land uses west of Interstate-215 to Chicago Avenue are characterized by strip and highway commercial uses. The frontage along University Avenue, west of Chicago Avenue, remains commercial although the lot depths are relatively narrow in some areas. The Bobby Bonds Sports Complex is located west of Chicago Avenue. Residential neighborhoods are concentrated in the western half of the corridor to the north and south of University Avenue behind the commercial frontages. University Avenue is lined with mature ficus and palm trees through most of this segment, with some mature pepper trees aligning the AT&SF and Southern Pacific railroad overcrossings just east of downtown.

Planned Land Uses.

Future development within this corridor segment is governed by the City of Riverside Land Use Element and the *University Avenue Specific Plan.* The Specific Plan outlines permitted land uses and corresponding development standards within the subdistricts of the planning area (the planning area is divided into five subdistricts). A major portion of the corridor segment is located within the Central Industrial Redevelopment Project Area. Finally, future development within the University of California campus is governed by the *1990-2005 Long Range Development Plan.*

The University Avenue Specific Plan calls for the development of three focal points: 1) mixed use development in the vicinity of University Village Center; 2) revitalization of the existing community shopping center; and, 3) a third node in the

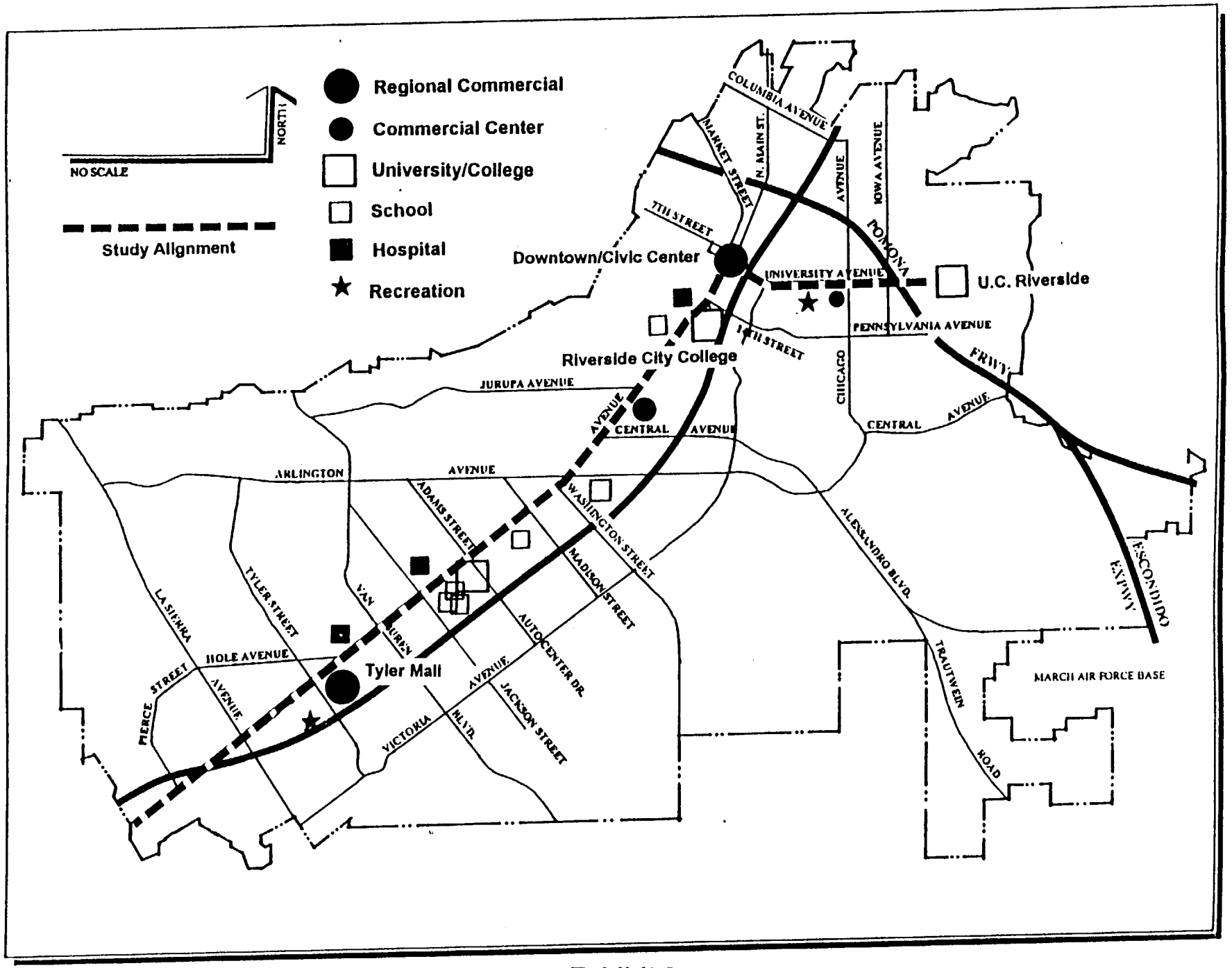

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Exhibit 2

Major Development

vicinity of Park Avenue. That portion of the corridor between I-60 and Chicago Avenue is slated for tourist, retailing, and office professional uses. Student housing is proposed adjacent to Iowa Avenue north of the corridor. Smaller retailing uses are planned along the western half of the corridor (reflecting the narrow lot depths).

The Long Range Development Plan for the University of California, Riverside (UCR) campus identifies existing and planned development within the campus. The Plan outlines five goals that will guide the growth and physical development of the 1,200-acre campus to accommodate an enrollment of 18,050 students (compared to the current enrollment of 8,677). The Development Plan calls for significant improvements along University Avenue which will become the main entryway into the campus. Extensive new development is envisioned along the University Plaza and University Mall (which are extensions of University Avenue into the campus). Planned development includes a new performing arts center, student center administration building, fine arts building, and classroom facilities. A conference center is also proposed adjacent to University Avenue, west of SR-60.

The Riverside Marketplace Specific Plan encompasses a 200-acre area just east of downtown and SR-91. The Specific Plan concept is to promote mixed land uses within the historic center of the City that would reflect the character and preserve the unique characteristics within eight sub-areas.

The zoning designations along University Avenue generally reflect the distribution of existing development. Both sides of University Avenue frontages are zoned *C-2 Restricted Commercial*. The Specific Plan indicates where there are inconsistencies, the Specific Plan shall prevail.

Sensitive Land Uses.

This corridor segment is presently subject to traffic related impacts associated with vehicles along University Avenue and spill over impacts from the nearby freeway - State Route 60 (SR-60). The traffic impacts include high levels of noise which are likely to exceed 65 DBA during much of the day. In addition, local air quality immediately adjacent to University Avenue and at the busier intersections are likely to be unhealthful to children, seniors, and persons with respiratory problems.

The sensitive land uses (both existing and future) that may be impacted by transit operations along this portion of University Avenue include the residential neighborhoods to the rear of the commercial frontage along the western half of University Avenue.

TABLE 2
SEGMENT A: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
No land use impacts are anticipated since no ROW will be required.	Minor land takes would be required west of Chicago Avenue.	Potential land take of 7 feet on either side at intersections for at-grade.	No land use impacts are anticipated since no ROW will be required.
No population and housing impact. No displacement.	Limited displacement impacts.	Growth inducing impact	Growth inducing impact.
No impact on public health.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.
No improvement in air quality envisioned. Over time, air quality may worsen with increased traffic	Some improvement in air quality associated with the reduction in vehicle trips. Mobile emissions associated with buses and vehicles.	Some improvement in air quality associated with the reduction in vehicle trips.	Some improvement in air quality associated with the reduction in vehicle trips.
No project would result in increased traffic congestion.	One travel lane would be eliminated. Localized congestion may increase.	Median and two travel lanes would be replaced with either at grade or elevated LRT. At-grade would prohibit mid-block left turns.	Median and two travel lanes would be replaced. Mid-block left turns would be retained.
No impacts on street trees and landscaping	No impacts on street trees or landscaping.	No impacts on street trees or landscaping.	No impacts on street trees or landscaping.
Energy consumption associated with increased vehicle usage.	Busses will use alternative fuels. Also, some reduction in fuel consumption due to reduction in VMTs.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.
Increased traffic noise along University and Magnolia Avenues.	Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.
No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.
No aesthetic and visual impacts	No aesthetic or visual impacts.	No aesthetic or visual impacts.	Views of elevated guideway would be introduced to area.
Cultural resources would not be impacted.	Cultural resources would not be impacted.	Intersection widenings may impact Riverside Marketplace.	Cultural resources would not be impacted.

Source: David Evans and Associates, Inc., 1994.

SEGMENT B - MAGNOLIA AVENUE: 14th STREET TO JURUPA AVENUE

Existing Development.

For the most part, development along Magnolia Avenue between 14th Street and Jurupa Avenue is residential in nature. With some exceptions, single family residences line this corridor segment. The Riverside Community Hospital, Central Junior High School, and the Riverside Community College are located at the northerly end of the segment. A church is also located adjacent to the hospital and junior high school. The parkways lining the residential section, in this segment, are planted with mature pepper trees, magnolias, eucalytus, and pines. Some maples and palms are also planted along the southern section of the parkway.

Planned Land Uses.

The City's General Plan Land Use Element indicates the type of future development that is to occur within specific locations throughout the City. The land use designation within Segment B of the proposed transit corridor is primarily, *Medium Density Residential (RMD)*. Some parcels in the vicinity of Jurupa Avenue are designated as *Low Rise Office (OLR)*, *Commercial/Industrial/Office (CBO)* and *Public Facilities and Institutions (PFI)*. At the northern end of this segment, the Riverside Community College area is designated *PFI*. There are also *Public Park (NPK)* and *OLR* designations in the college area.

Sensitive Land Uses.

Traffic along Magnolia Avenue and the various cross streets through this segment create impacts to the sensitive receptors (residential, hospital, and schools) in the area. Traffic noise and air quality impacts are created by vehicles travelling through the area. As indicated above, the Riverside Community Hospital, Central Junior High School, the private school, and the Riverside Community College are located at the northerly end of the segment. These land uses are considered to be sensitive receptors.

TABLE 3
SEGMENT B: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
No **land use** impacts are anticipated since no ROW will be required.	No land use impacts are anticipated since no ROW will be required.	Widening may be required at signalized intersections.	Widening may be required at signalized intersections.
No **population and housing** impact. No displacement.	No population and housing impact. No displacement.	Growth inducing impact	Growth inducing impact.
No impact on **public health.**	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.
No improvement in **air quality** envisioned. Over time, air quality may worsen with increased traffic	Some improvement in air quality associated with the reduction in vehicle trips. Mobile emissions associated with buses and vehicles.	Some improvement in air quality associated with the reduction in vehicle trips.	Some improvement in air quality associated with the reduction in vehicle trips.
No project would result in increased **traffic** congestion.	One travel lane would be eliminated. Through traffic would improve although localized congestion may increase.	Two travel lanes would be lost with at-grade option. Mid-block left turns would be eliminated.	All travel lanes would be retained. Mid-block left turns would be eliminated.
No impacts on **street trees and landscaping**	No impacts on street trees or landscaping.	No impacts on street trees or landscaping.	No impacts on street trees or landscaping.
Energy consumption associated with increased vehicle usage.	Busses will use alternative fuels. Also, some reduction in fuel consumption due to reduction in VMTs.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.
Increased traffic **noise** along Magnolia Avenue.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion during peak periods possible.
No significant changes in **services and utilities.**	No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.
No **aesthetic and visual** impacts.	No aesthetic or visual impacts.	No aesthetic or visual impacts.	Views of elevated guideway would be introduced to area.
Cultural resources would not be impacted.	Cultural resources would not be impacted.	Possible intersection widenings may impact public and institutional uses.	Possible intersection widenings may impact public and institutional uses.

Source: David Evans and Associates, Inc., 1994.

SEGMENT C - MAGNOLIA AVENUE: JURUPA AVENUE TO WASHINGTON STREET

Existing Development.

Development along this corridor segment is characterized by highway commercial uses with some office use. A Union Pacific railroad track crosses the route just north of Merrill Avenue. A public library and post office are located along the corridor beside Riverside Plaza shopping center, just east of Magnolia Avenue and a private school is located south of Central Avenue at School Circle. A left-turn median is provided on Magnolia Avenue at School Circle. A small park is also located at the south of this segment.

Planned Land Uses.

The predominant land use designation through this segment is *Commercial/Industrial/ Office (CBO). Low Rise Office (OLR), High Density Residential (RHD)* and *Public Facilities and Institutions (PFI)*, as well as a small *Public Park (NPK)* designation are all located at the southern end of this segment.

Sensitive Land Uses.

The public library and the private school on School Circle are sensitive receptors. The library and school would be sensitive to noise and air quality impacts.

TABLE 4
SEGMENT C: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
No land use impacts are anticipated since no ROW will be required.	No land use impacts are anticipated since no ROW will be required.	On-street parking would be eliminated. No other land use impacts are anticipated since no ROW will be required.	On-street parking would be eliminated. No other land use impacts are anticipated since no ROW will be required.
No population and housing impact. No displacement.	No population and housing impact. No displacement.	Growth inducing impact	Growth inducing impact.
No impact on public health.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.
No improvement in air quality envisioned. Over time, air quality may worsen with increased traffic	Some improvement in air quality associated with the reduction in vehicle trips. Mobile emissions associated with buses and vehicles.	Some improvement in air quality associated with the reduction in vehicle trips.	Some improvement in air quality associated with the reduction in vehicle trips.

TABLE 4
SEGMENT C: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
No project would result in increased traffic congestion.	Mixed traffic would be required in this segment, resulting in increased traffic congestion.	Aerial structure would be required with a loss of mid-block travel lanes and on-street parking.	A loss of mid-block travel lanes and on-street parking, similar to the LRT option. Mid-block left turns would be prohibited.
No impacts on street trees and landscaping	No impacts on street trees or landscaping.	No impacts on street trees or landscaping.	No impacts on street trees or landscaping.
Energy consumption associated with increased vehicle usage.	Busses will use alternative fuels. Also, some reduction in fuel consumption due to reduction in VMTs.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.
Increased traffic noise along Magnolia Avenue.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.
No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.
No aesthetic and visual impacts	No aesthetic or visual impacts.	Views of elevated guideway would be introduced to area.	Views of elevated guideway would be introduced to area.
Cultural resources would not be impacted.	Cultural resources would not be impacted.	Cultural resources would not be impacted.	Cultural resources would not be impacted.

Source: David Evans and Associates, Inc., 1994.

SEGMENT D - MAGNOLIA AVENUE: WASHINGTON STREET TO JACKSON STREET

Existing Development.

Land uses along Magnolia Avenue between Washington Street and Jackson Street are developed primarily as multi-family residential with some intermittent single-family residential uses. The California Baptist College Campus, Cal West Nursing Home, Parkview Community Hospital, Ramona and Sherman Indian High Schools, as well as three churches and a private school are all institutional uses located within this segment. Some commercial/office centers are located at the northern and southernmost portions of this segment. Washington Street marks the beginning of a highway median strip containing utility poles and street lights. The median and parkways are planted with rows of mature street trees including pepper trees, pine trees, palms, and magnolias.

Planned Land Uses.

Segment D is predominantly *High Density Residential (RHD)*. Also included in this segment are *Low Rise Office (OLR)*, *Medium Density Residential (RMD)*, and *Public Facilities and Institutions (PFI)*.

Sensitive Land Uses.

This entire segment, with the exception of the small office/commercial segments, consists of sensitive land uses. The residential, hospital, nursing home, and various schools all are classified as sensitive receptors. The sensitive receptors are impacted by existing noise and air pollution from traffic on Magnolia Avenue and the various cross streets. As indicated above, the California Baptist College Campus, Cal West Nursing Home, Parkview Community Hospital, and Ramona and Sherman Indian High Schools are located along this segment.

TABLE 5
SEGMENT D: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
No land use impacts are anticipated since no ROW will be required.	Median island would be eliminated and parkway would be reduced 5 feet on either side OR parkways reduced 13 feet each.	Existing median would be reconfigured and replanted for at grade. Elevated would replace median.	Median would be removed OR 1 parkway would be narrowed and existing median would be relocated.
No population and housing impact. No displacement.	No population and housing impact. No displacement.	Growth inducing impact.	Growth inducing impact.
No impacts on public health.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.
No improvement in air quality envisioned. Over time, air quality may worsen with increased traffic	Some improvement in air quality associated with the reduction in vehicle trips. Mobile emissions associated with buses and vehicles.	Some improvement in air quality associated with the reduction in vehicle trips.	Some improvement in air quality associated with the reduction in vehicle trips.
No project would result in increased traffic congestion.	Four lanes would be retained. Through traffic would improve although localized congestion may increase.	Four lanes would be retained. Left turn lanes would be removed. Through traffic would improve although localized congestion may increase.	Four lanes would be retained. Left turn lanes would be removed. Through traffic would improve although localized congestion may increase.
No impacts on street trees and landscaping	Median trees would be removed and parkway trees would be relocated.	Median trees would be removed and parkway trees would be relocated.	No impacts on street trees or landscaping.

TABLE 5
SEGMENT D: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
Energy consumption associated with increased vehicle usage.	Busses will use alternative fuels. Also, some reduction in fuel consumption due to reduction in VMTs.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.
Increased traffic noise along Magnolia Avenue.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.
No significant changes in **services and utilities.**	Utilities would be relocated underground.	Utilities would be relocated underground.	Utilities would be relocated underground.
No **aesthetic and visual** impacts	Removal of street trees.	Removal of street trees.	Removal of street trees. Views of elevated guideway would be introduced to area.
Cultural resources would not be impacted.	Cultural resources would not be impacted.	Cultural resources would not be impacted.	Cultural resources would not be impacted.

Source: David Evans and Associates, Inc., 1994.

SEGMENT E - MAGNOLIA AVENUE: JACKSON STREET TO BANBURY DRIVE

Existing Development.

Development along this corridor segment is characterized by commercial land uses. Highway commercial development characterizes most of the segment. However, the Tyler Mall, a regional commercial center, is located adjacent to the study corridor. Riverside General Hospital and University Medical Center are also located adjacent to the alignment several blocks east of Tyler Mall. A post office, a public library, and a fire station are all located in the general vicinity of Van Buren Boulevard. The median strip narrows in this segment and no longer contains utility poles. Some small magnolia trees are located in the median strip.

Planned Land Uses.

The General Plan Land Use categories along this segment of the corridor are almost entirely *Commercial/ Industrial/ Office (CBO)* with two areas (including Riverside General Hospital) designated *Public Facilities and Institutions (PFI).*

Sensitive Land Uses.

Riverside General Hospital and University Medical Center are the primary sensitive land uses in this segment that would be impacted by traffic noise and air pollutants.

TABLE 6
SEGMENT E: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
No **land use** impacts are anticipated since no ROW will be required.	No land use impacts are anticipated since no ROW will be required.	Minor landtakes south of Magnolia.	Minor landtakes south of Magnolia.
No **population and housing** impact. No displacement.	No population and housing impact. No displacement.	Growth inducing impact.	Growth inducing impact.
No impact on **public health.**	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.
No improvement in **air quality** envisioned. Over time, air quality may worsen with increased traffic	Some improvement in air quality associated with the reduction in vehicle trips. Mobile emissions associated with buses and vehicles.	Some improvement in air quality associated with the reduction in vehicle trips.	Some improvement in air quality associated with the reduction in vehicle trips.
No project would result in increased **traffic** congestion.	Mixed flow traffic would result in increased traffic congestion.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.
No impacts on **street trees and landscaping**	No impacts on street trees or landscaping.	Reduction in parkway landscaping. Minimal impacts on street trees.	Reduction in parkway landscaping. Minimal impacts on street trees.
Energy consumption associated with increased vehicle usage.	Busses will use alternative fuels. Also, some reduction in fuel consumption due to reduction in VMTs.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.
Increased traffic **noise** along Magnolia Avenue.	Increased traffic noise along Magnolia Avenue.	Improvements in through traffic travel times. Localized increases in congestion during peak periods possible.	Improvements in through traffic travel times. Localized increases in congestion during peak periods possible.
No significant changes in **services and utilities.**	No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.
No **aesthetic and visual** impacts	No aesthetic or visual impacts.	No aesthetic or visual impacts.	Views of elevated guideway would be introduced to area.

TABLE 6
SEGMENT E: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
Cultural resources would not be impacted.	Cultural resources would not be impacted.	Cultural resources would not be impacted.	Cultural resources would not be impacted.

Source: David Evans and Associates, Inc., 1994.

SEGMENT F - MAGNOLIA AVENUE: BANBURY DRIVE TO PIERCE STREET AND LA SIERRA CAMPUS

Existing Development.

Land uses along this corridor segment are predominantly commercial and institutional in nature north of La Sierra Avenue/McMillan Drive. Just south of Polk Street, the median strip widens once again and some high voltage power lines again are located in the median strip. Pepper trees and magnolias and some small bushes are planted in the median. A Kaiser Medical Facility is located just north of McMillan Drive. South of La Sierra/McMillan, to Pierce Street, this segment is mainly residential, both single family and multi-family, with some large vacant parcels near the Riverside Freeway (SR 91) overcrossings and office parks at both Pierce Street and La Sierra Avenue/McMillan Drive. A small mini-mall is also located at the Pierce Street crossing. The utility poles leave the median strip again at La Sierra/McMillan, and only street lights share the median with Magnolia trees, palms, and low shrubs. Palm trees are also planted in the parkways. East of the Riverside Freeway overcrossing, there are power poles located along the eastern parkways. These power poles also run along the southern Pierce street parkway. Along Pierce Street, toward the Loma Linda University, La Sierra Campus, the segment contains mainly large agricultural parcels, with some single and multi-family development near the college, including two mobile home parks.

Planned Land Uses.

The General Plan for this segment calls for *Commercial/Industrial/Office (CBO)*, *Public Facilities and Institutions (PFI)*, *High Density Residential (RHD)*, *Medium High Density (RMH)*, *Medium Density Residential (RMD)*, and *Service Commercial (CSV)*.

In the southernmost portion of the segment, there is a 531-acre parcel where major development is envisioned. The area is located approximately 1,600 feet northeast of Magnolia Avenue just north of the SR-91 freeway. A Specific Plan is being prepared to guide the development of 83 acres of industrial uses, 35 acres of

commercial and office uses, and approximately 1,600 residential units. In addition, the Plan will provide for the expansion of the La Sierra University to accommodate a total of 5,000 students (compared to the existing 1,500 students).

Sensitive Land Uses.

The Kaiser facility, La Sierra University campus, and all of the residential areas in this segment are sensitive receptors that would be impacted by noise and air quality impacts.

TABLE 7
SEGMENT F: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
No land use impacts are anticipated since no ROW will be required.	Median reduced on Magnolia Avenue and loss of on-street parking. Road widening on Pierce Street could be incorporated into La Sierra Specific Plan.	No land use impacts are anticipated since no ROW will be required.	No land use impacts are anticipated since no ROW will be required.
No population and housing impact. No displacement.	No population and housing impact. No displacement.	Growth inducing impact	Growth inducing impact.
No impact on public health.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.
No improvement in air quality envisioned. Over time, air quality may worsen with increased traffic	Some improvement in air quality associated with the reduction in vehicle trips. Mobile emissions associated with buses and vehicles.	Some improvement in air quality associated with the reduction in vehicle trips.	Some improvement in air quality associated with the reduction in vehicle trips.
No project would result in increased traffic congestion.	Four through lanes will be retained. Through traffic would improve although localized congestion may increase.	Four through lanes will be retained. Through traffic would improve although localized congestion may increase.	Four through lanes will be retained. Through traffic would improve although localized congestion may increase.
No impacts on street trees and landscaping	No impacts on street trees or landscaping.	Mature street trees would be replaced by smaller features.	Mature street trees would be replaced by smaller features.
Energy consumption associated with increased vehicle usage.	Busses will use alternative fuels. Also, some reduction in fuel consumption due to reduction in VMTs.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.
Increased traffic noise along University and Magnolia Avenues.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in traffic noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in traffic noise during peak periods possible.

TABLE 7
SEGMENT F: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.
No aesthetic and visual impacts	No aesthetic or visual impacts.	Character of landscaping would change.	Views of elevated guideway would be introduced to area.
Cultural resources would not be impacted.	Cultural resources would not be impacted.	Cultural resources would not be impacted.	Cultural resources would not be impacted.

Source: David Evans and Associates, Inc., 1994.

SEGMENT G - DOWNTOWN RIVERSIDE

Existing Development.

Development in downtown Riverside is characterized by higher density office professional, commercial and institutional land uses. The Riverside Civic Center is a sprawling complex of office buildings containing both City and County government offices. A pedestrian corridor links the Civic Center to the historic district encompassing 6th and 7th Streets. The transportation corridor would be routed past either the Riverside Transportation Terminal or the Civic Center.

Planned Land Uses.

Future development in the downtown area is governed by the City of Riverside Land Use Element. That portion of the downtown area east of the I-91 freeway and between 14th Street (on the south) and Third Street (on the north) is included in the *Riverside Marketplace Specific Plan.*

The land use plan contained in the *Marketplace Specific Plan* calls for the area to developed with a wide range of land uses which will include industrial, business park, mixed uses, and lower density residential. The Plan's focus is also to improve the appearance of the area through architectural, streetscape, and landscape design guidelines.

Sensitive Land Uses.

Traffic travelling on the SR-91 freeway and major arterials is responsible for significant noise levels throughout the downtown area. More intensive development

of the downtown area is planned. This type of development is compatible with mass transit facilities.

TABLE 8
SEGMENT G: CONSTRAINTS AND OPPORTUNITIES

Baseline	Bus/HOV Lanes	LRT	People Mover/Monorail
No land use impacts are anticipated since no ROW will be required.	No land use impacts are anticipated since no ROW will be required.	No land use impacts are anticipated since no ROW will be required.	Commercial bldg. at N/E corner of Market/10th Street land take.
No population and housing impact. No displacement.	No population and housing impact. No displacement.	Growth inducing impact	Growth inducing impact
No impact on public health.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.	No substantial changes over the existing level of risk.
No improvement in air quality envisioned. Over time, air quality may worsen with increased traffic.	Some improvement in air quality associated with the reduction in vehicle trips. Mobile emissions associated with buses and vehicles.	Some improvement in air quality associated with the reduction in vehicle trips.	Some improvement in air quality associated with the reduction in vehicle trips.
No project would result in increased traffic congestion.	Mixed travel lanes would result in increased traffic congestion.	Mixed travel lanes would result in increased traffic congestion.	Left-turn lanes eliminated and lane reduction.
No impacts on street trees and landscaping	No impacts on street trees or landscaping.	No impacts on street trees or landscaping.	No impacts on street trees or landscaping.
Energy consumption associated with increased vehicle usage.	Busses will use alternative fuels. Also, some reduction in fuel consumption due to reduction in VMTs.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.	Some reduction in fuel consumption due to reduction in VMTs and use of electric powered trains.
Increased traffic noise along University and Magnolia Avenues.	Improvements in through traffic travel times. Localized increases in congestion noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in traffic noise during peak periods possible.	Improvements in through traffic travel times. Localized increases in traffic noise during peak periods possible.
No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.	No significant changes in services and utilities.
No aesthetic and visual impacts	No aesthetic or visual impacts.	No aesthetic or visual impacts.	Views of elevated guideway would be introduced to area.
Cultural resources would not be impacted.	Cultural resources would not be impacted.	Intersection widenings would impact Riverside Marketplace.	Cultural resources would not be impacted.

Source: David Evans and Associates, Inc., 1994.

DESCRIPTION OF FUTURE DEVELOPMENT ALONG THE STUDY ALIGNMENT

The City of Riverside Planning Department was contacted to identify future development that is proposed, approved, or under construction in the immediate vicinity of the study alignment. The survey indicated that 7,989 units are planned within three miles of the corridor. Assuming an average household size of 3.045 persons per unit (which was derived from the State Department of Finance estimates), the future projects that have been identified would increase the City's population by 24,327. Table 9 describes the future development projects.

TABLE 9
FUTURE DEVELOPMENT IN VICINITY OF CORRIDOR

Project/Type of Development	Location	Size
Single Room Occupancy Housing Project	2450 Market Street	111 Rooms
County Farm Office Development	Riverside Hospital site, north of Magnolia Avenue	134 Acres 290,000 square feet
Lake Hills Specific Plan	Northeast of La Sierra Avenue and El Sobrante Road	1,650 Acres 1,745 dwelling units
La Sierra University Specific Plan	Pierce Street	230 Acres 1,600 dwelling units 35 acres commercial/office 83 acres industrial
Spanish Mill Specific Plan	Riverside County, east of McAllister Street	335.4 Acres 295 SF dwelling units
Rancho La Sierra Specific Plan	La Sierra Avenue, south of Santa Ana River Reg. Park	760 Acres 1,752 dwelling units 188-acre golf course 8 acres commercial 75 room Inn
Tract No. 22798	Arlington Heights	50 dwelling units
Tract No. 22291	Arlington Heights	83 dwelling units
Tract No. 21605	Near Airport	160 dwelling units
Tract No. 21394	Near Airport	80 dwelling units
Tract No. 23407	Arlanza-La Sierra	64 dwelling units
Tract No. 21117	Arlanza-La Sierra	224 dwelling units
Tract No. 21227	Arlanza-La Sierra	216 dwelling units
Tract No. 25328	Arlington	70 dwelling units

Source: City of Riverside Planning Department, Riverside Redevelopment Agency